

VI. *On some new or rare Phasmidæ in the Collection of the British Museum.* By W. F. KIRBY, F.L.S., F.E.S., Assistant in the Zoological Department, British Museum, South Kensington.

(Plates XXXIX. & XL.)

Read 5th December, 1895.

THE *Phasmidæ* are in many respects a very interesting group of insects, but their study has been comparatively neglected. They attain a larger size than any other existing insects known, and many of the species are of brilliant colours; but they take up much space in a cabinet, and when preserved in spirit, as is too often the case, their colours are discharged, and they become brittle and unsightly grey, yellow, or brown objects. (I never lose an opportunity of protesting against the indiscriminate use of spirit by collectors. It is a most convenient mode of collecting, but is adapted only for hard shining insects like bugs, beetles, and cockroaches, which have no delicate colours to bleach, exposed wings to tear, or pubescence to mat.) Again, the *Phasmidæ* are sluggish insects, highly protective in their appearance, and generally to be found resting motionless on their food-plants. They are therefore difficult to see and collect, and, as they are little studied, they have no market value; and amateurs who send out collectors to obtain butterflies or beetles sometimes expressly discourage their collectors from paying attention to groups of insects which do not interest them.

The *Phasmidæ* are pre-eminently a tropical group, and probably attain their maximum of size and beauty in the Eastern Archipelago, from the Malay Islands to Australia inclusive, though the number of species is perhaps greater in Tropical America; and in both these particulars they resemble butterflies. Four small species only are found in Europe south of the Alps, and of these only one, *Phasma gallicum*, Charpentier, extends as far north as South France, where it appears to be rare. In the United States likewise only a few species occur, only one of which, *Diapheromera Sayi*, Gray, crosses the St. Lawrence into Canada, where it is found at Montreal. Several species are found in China and Japan, but their northern extension in Eastern Asia is not yet accurately known. Southward, they extend to the Cape of Good Hope in Africa, and at least as far as Chili in South America.

Many of the species are apterous in one or both sexes, while others have very large wings. Sometimes they are perfectly smooth and rod-like; but more frequently they have spines on the head, legs, and body, sometimes simple, sometimes broad and triangular, and often accompanied or replaced by large leaf-like expansions, especially in the species of the Eastern genus *Phyllium*, Illiger, which present the exact appearance of green veined leaves, and have always been known as "Walking Leaves." The *Phasmidæ* in general are known as "Walking Sticks," "Stick Insects," or "Spectres;" and many of the wingless species exhibit a very curious resemblance to dead twigs. Others are

green, with jointed bodies (*e. g.* the genus *Hermarchus*, Stål), and present an exact resemblance to shoots of bamboo, being seven or eight inches long, and as thick as a finger. Smaller species, belonging to the genus *Græffea*, Brunner, are sometimes extremely injurious to the cocoanut-trees in the South Sea Islands; so much so that the chiefs sometimes issue orders for their destruction by chopping them to pieces. Many *Phasmidæ* exude a liquid from the body when alarmed; but this cocoanut feeder is said to have the power of squirting a fluid, sufficiently acrid to cause blindness if it touches the eyes, to a distance of four feet. Otherwise the *Phasmidæ* appear to be generally harmless, except sometimes, to vegetation; and it is probably only a few species which cause much mischief in this respect.

The largest species known belongs to the genus *Pharnacia*, Stål. It is from Borneo, and the name of *Pharnacia serratipes*, Gray, has been provisionally attached to it in the public Insect Room at the Natural History Museum, South Kensington. Accurate measurements, taken by Mr. C. O. Waterhouse, will be found in the present paper; but in this place I need only say that it measures nearly 13 inches from the front of the head to the extremity of the abdomen. Another specimen, from a doubtful locality, measures only  $10\frac{1}{2}$  inches in total length; but without more specimens it is impossible to ascertain positively whether they belong to the same species or not, for except size, and a possible difference in the comparative size of the spines (a character not easily estimated when comparing a dried and a spirit specimen), I have not been able to detect any characters by which to separate them. Moreover, in many *Phasmidæ*, the males differ very much from the females, being much smaller, slenderer, and with the spines, &c., much less developed; and it is therefore unsafe to attempt to pair the sexes, unless they are received from the same locality and in the same collection. The type of *Pharnacia serratipes*, Gray, is a slender winged insect, only  $6\frac{3}{4}$  inches in length; and no one has yet determined whether the two large apterous females to which I have referred belong to *P. serratipes* or to some allied species, of which the males are as yet undiscovered. As a rule, the female insects are much commoner in collections than the males.

Many *Phasmidæ* were described by the older writers, and a considerable number were figured by Stoll in 1813, in his 'Représentation des Spectres ou Phasmes.'

In 1833 George Robert Gray published the first part of a projected work on the Entomology of Australia, containing 8 plates illustrating some of the magnificent species of that country; and though this work was never continued, Gray published a 'Synopsis of the Species of Insects belonging to the Family of *Phasmidæ*' in 1835, describing a considerable number of new genera and species.

In 1839 Burmeister gave a critical *résumé* of the *Phasmidæ* in the second volume of his 'Handbuch der Entomologie,' as also did De Haan of the Eastern species, in 1842, in his synopsis of *Orthoptera* in Temminck's splendidly illustrated 'Verhandelingen.'

In 1859 the British Museum issued one of its most important entomological publications,—Westwood's quarto Catalogue of *Phasmidæ*, with 40 uncoloured plates.

Among the more important contributions to the knowledge of this group of insects which have appeared since that date are Bates's "Descriptions of 52 new Species of *Phasmidæ*," Trans. Linn. Soc. vol. xxv. (1865), and De Saussure's "Mélanges Orthoptéro-

logiques" (Mém. Soc. Phys. et d'Hist. Nat. Genève, xx.), and 'Mission Scientifique au Mexique, Recherches Zool.' vi. (1869-70). All these publications are illustrated with uncoloured plates.

Between the years 1855 and 1875 the active and industrious but hasty and self-opiniated Swedish entomologist, Dr. Stål, published numerous papers on *Orthoptera*, including a revision of the *Phasmidæ*. These are scattered through the various publications of the Vetenskaps Akademic of Stockholm, and are not only cast in the form of very complicated tables, with numerous exceptions, which make them extremely difficult to follow, but the genera are frequently based on the examination of one or two species only; and hence it becomes difficult to judge how far the genera, as restricted by him, correspond with those of other authors. Nevertheless his system was considerably in advance of that of Westwood, who had regarded the presence or absence of wings as a character of primary importance; and in 1893 Brunner de Wattenwyl, when working out Fea's Burmese collection of *Orthoptera* in the 'Annali del Museo Civico di Storia Naturale di Genova,' ser. 2, vol. xiii. (or vol. xxxiii. of the whole series), took occasion to sketch out a revision of the Order, including the *Phasmidæ*, which he divided into 12 families. The characters on which he relies are the form of the hind tibiæ beneath, whether carinated to the tip or excavated; the length of the antennæ, as compared with that of the front femora; the length of the median segment; the form of the terminal segments of the abdomen, &c. The median segment is an important character, first utilized by Stål. In the *Phasmidæ* the first segment of the abdomen is anchylosed with the metathorax so as to form one piece with it, and in some cases so closely that the point of division is barely distinguishable. Among other peculiarities, the supra-anal lamina of the female is a structure which may be absent or rudimentary, or, as in the genus *Promachus*, it may be produced into a spine. The operculum of the female is a concave appendage on the lower surface of the abdomen, which is sometimes so short as to be covered by it, and sometimes forms a gutter projecting a long way beyond the abdomen.

In the main, Brunner de Wattenwyl's divisions appear to be natural, though some of them will probably require more or less modification before they can be finally accepted. I have followed them in the present paper, in which I have endeavoured to describe the greater part of the unpublished species in the Natural History Museum, though there are others which I have passed over, because the material at my disposal is at present insufficient.

One or two additional points of special interest may be noticed before I proceed to the systematic part of the paper. The *Mantidæ*, or Praying Insects, are the nearest allies of the *Phasmidæ*; but the former can always be distinguished by the long spines on the front tibiæ, which are used to kill and capture insect prey. No such arrangement is found in the *Phasmidæ*, which are all vegetable feeders. They are insects with imperfect metamorphoses, and sometimes a leg is lost in one of the early stages and is reproduced; it is then much smaller than the corresponding leg on the opposite side, and its spinous or lobate appendages, if any are present in the normal leg, are reduced or absent.

The late Prof. Riley estimated the total number of existing species of insects at ten millions (about 300,000 are known at present); and when it is considered that less than a dozen species of such large insects as *Phasmidæ* are known from a locality so frequently visited as Madagascar, and that our British species of parasitic *Hymenoptera*, among which are the smallest insects known, are numbered by hundreds, although very few entomologists have worked at them at all, Prof. Riley's estimate cannot be regarded as excessive. Excepting the larger butterflies and beetles of the best-explored countries, our knowledge of the insects of the world is far more incomplete than many persons, even though experienced entomologists, might be inclined to suppose.

At present the British Museum Collection of *Phusmidæ* fills 120 cabinet-drawers, but will soon require to be extended. More materials, at all events, are needed before a satisfactory revision of the classification of *Phusmidæ* can be attempted.

#### Subfamily LONCHODINÆ.

##### PHARNACIA SERRATIPES.

*Cladoxerus serratipes*, Gray, Synopsis of Phasmidæ, p. 12 (1835).

*Phibalosoma serratipes*, Westw. Cat. Phasm. p. 75, n. 192 (1859).

This genus differs from most of the *Lonchodinae* in having winged males.

Some particulars respecting the supposed females of this insect are given in the introductory portion of this paper. The colour, when alive, was evidently green, and the legs are strongly carinated and spined, nearly as in the male; but the body is otherwise unarmed. The typical male is from Malabar. The dimensions of the large female from Borneo are given below; it will be seen that they are somewhat asymmetrical.

##### *Pharnacia serratipes*, ♀. Borneo.

|                                   |                  |   |
|-----------------------------------|------------------|---|
| Total length of body . . . . .    | 1 foot 10 lines. |   |
| Length of head . . . . .          | 6½ "             |   |
| " prothorax . . . . .             | 6½ "             |   |
| " mesothorax . . . . .            | 32½ "            |   |
| " metathorax (incl. intermediate) | 23 "             |   |
| " intermediate . . . . .          | 10¾ "            |   |
| " front femur, right side . . .   | 34 "             |   |
| " " left side . . . . .           | 37 "             |   |
| " middle " right side . . .       | 31½ "            |   |
| " " left " . . . . .              | 29½ "            |   |
| " hind " right " . . . . .        | 35½ "            |   |
| " " left " . . . . .              | 33½ "            |   |
| " front tibia, right " . . . .    | 45½ "            |   |
| " " left " . . . . .              | 49½ "            |   |
| " hind tibia (right and left) .   | 44 "             |   |
| " front tarsus, right side . .    | 13 "             | } The right tibia and tarsus are<br>more slender than the left. |
| " " left " . . . . .              | 15 "             |   |
| " hind " right " . . . . .        | 16 "             |   |
| " " left " . . . . .              | 14 "             |   |

## PHARNACIA PONDEROSA.

*Pharnacia ponderosa*, Stål, Öfvers. Vet.-Akad. Förh. xxxiv. (10) p. 10 (1877).

Stål briefly describes the male. The British Museum possesses a female from Luzon which may belong to this species. It is dull testaceous, mottled with brown, and has rudimentary lighter-coloured tegmina, very distinctly longitudinally lined with black along the nervures. The operculum is long, narrow, and pointed. Length 135 millim., of tegmina 7 millim., of operculum 15 millim. The specimen is in too poor condition to make it worth while to describe it in detail.

## MYRONIDES PFEIFFERÆ, var. (?).

*Lonchodes Pfeifferæ*, Westw. Cat. Phasm. p. 44, pl. v. fig. 6.

The types are from Ceram. There is a male specimen in the British Museum from Ternate, differing chiefly in the greater length of the metanotum, which is one-fifth longer than the median segment. In this it agrees with the female from Ceram; in the male from the latter locality the median segment and metanotum are almost exactly of equal length. But I will not venture to describe the Ternate insect as new on a single specimen.

## LONCHODES WHITEHEADI, sp. n.

*Female*. Brown, cylindrical, strongly granulated; head with two short, broad horns between the eyes; prothorax with two raised tubercles in front; all the parts of the thorax and the joints of the abdomen with a short, raised tubercle behind; middle legs shorter than the front or hind legs; front femora very slightly dentated on the inner carina before the extremity; middle femora with two rounded lobes beneath, not dentated, before the extremity; hind femora with only the lobe on the inner carina developed; middle legs with traces of broad yellow bands; metathorax black on the sides and on the hinder part above; abdomen with black triangles on the sides, which probably meet on the back of some of the hinder segments. (Colours altered.)

*Dimensions.*

|  |    |         |
|--|----|---------|
| Long. corporis . . . . .                   | 75 | millim. |
| „ capitis . . . . .                        | 6  | „       |
| „ pronoti . . . . .                        | 3½ | „       |
| „ mesonoti . . . . .                       | 20 | „       |
| „ metanoti, cum segmento mediano . . . . . | 13 | „       |
| „ segmenti mediani . . . . .               | 3  | „       |
| „ femorum anticorum . . . . .              | 22 | „       |
| „ „ medianorum . . . . .                   | 15 | „       |
| „ „ posticorum . . . . .                   | 20 | „       |

Albay, S. E. Luzon (*Whitehead Expedition*).

The lobate, undentated, middle and hind femora distinguish this from any other species of the genus before me.

LONCHODES BATESII, sp. n.

*Female.* Cylindrical, brown (colours evidently altered), granulated. Head above grooved, the groove passing between the black points on the vertex between the eyes; outside these are a pair of larger tubercles or short horns, outside which subsidiary grooves run obliquely to the central one. At the back of the head are likewise four rather larger tubercles; the central groove runs between the inner ones, and beyond the outer ones other grooves run, slightly diverging, to the eyes; below these is a row of three small tubercles behind the eyes. Prothorax about as long as the head, with a central groove and two transverse ones, one in front and the other about the middle; and there are also two lateral grooves. The central groove is bordered on both sides, and the lateral ones above, with rows of tubercles. At the back of the prothorax are two oblong black spots in the middle, and a black dot on each side beyond them. The rest of the thorax and the abdomen are not grooved, but carinated, along the median line. Antennæ long, setaceous, very finely pubescent, blackish at the extremities of the joints. Front legs long, slightly compressed; femora with the basal third irregularly serrated above, and a row of fine blackish teeth at the extremity beneath, preceded by a larger tooth. First joint of the tarsi (which is as long as the remaining joints without the claws) black, as are likewise the rest of the tarsi. Intermediate and hind legs much shorter; femora with larger black terminal serrations and preceding lobe, but smooth above; tibiæ with a lobe beneath towards the base; tarsi black, except the greater part of the first joint, which is much shorter than in the front legs.

The blackish apical portion of the middle and hind femora is preceded by a pale band, probably yellow in the living insect.

*Dimensions.*

|  |     |         |
|--|-----|---------|
| Long. corporis . . . . .                   | 100 | millim. |
| „ pronoti . . . . .                        | 5   | „       |
| „ mesonoti . . . . .                       | 24  | „       |
| „ metanoti, eum segmento mediano . . . . . | 15  | „       |
| „ segmenti mediani . . . . .               | 5½  | „       |
| „ femorum anticorum . . . . .              | 24  | „       |
| „ „ medianorum . . . . .                   | 17  | „       |
| „ „ posticorum . . . . .                   | 23  | „       |

*Hab.* Boroo (Bouru?).

LONCHODES VIRGATUS, sp. n.

*Male.* Cylindrical, brown, rather slender. Head granulated, not grooved, with two small pointed horns between the eyes, and two tubercles opposite them on the hinder border. Prothorax with shallow grooves, the longitudinal one not extending to the hind

border; of the lateral ones, one is anterior and the other median. The rest of the thorax and abdomen is finely granulated, with scarcely a trace of a longitudinal carina. Front femora beneath with one large and one small tooth before the extremity of the outer ridge, which is produced into a sharp spike; middle femora with a large tooth towards the extremity on each ridge, followed by four small ones on the inner, and two small ones on the outer ridge; hind femora with two or three small teeth on each side before the extremity. First joint of tarsi flattened, depressed, not much longer than the two following joints on all the legs. The left middle leg is deformed, being shorter than the other, only imperfectly dentated, and with only four joints to the tarsi.

*Dimensions.*

|  |            |
|--|------------|
| Long. corporis . . . . .                   | 94 millim. |
| „ pronoti . . . . .                        | 5 „        |
| „ mesonoti . . . . .                       | 23 „       |
| „ metanoti, cum segmento mediano . . . . . | 17 „       |
| „ segmenti mediani . . . . .               | 5 „        |
| „ femorum anticorum . . . . .              | 21 „       |
| „ femoris mediani (dextri) . . . . .       | 16 „       |
| „ femorum posticorum . . . . .             | 20 „       |

*Hab.* Boro (Bourn?).

Closely allied to *L. brevipes*, Gray, from Malabar, but differs in the character of the tothing of the middle femora. The other femora are also more strongly toothed. The abdominal appendages are nearly similar.

LONCHODES NIGROPUNCTATUS, sp. n.

*Female.* Cylindrical, brownish grey; clypeus and labrum smooth, yellowish; two black tubercles or short horns on the vertex behind the antennæ, rather wide apart; between them commences a carina which extends to the extremity of the body, all parts of which are irregularly covered with black granulations, largest on the head, behind the horns. Several of the divisions between the segments are spotted with black on each side of the median carina. Prothorax scarcely as long as the head, with the lateral ridges very distinct. Antennæ long, blackish above, except at the base; basal joint very large, compressed, and pubescent; second joint longer and broader than the following ones. Legs long; middle legs rather shorter than the rest; all the femora very slightly dentated at the extremity of the middle carina. First joint of all the tarsi slightly compressed, but not dilated, as long or longer than all the rest put together. Median segment about one-fourth of the length of the metanotum, cut off straight in front. Seventh segment of abdomen rather shorter than the preceding ones, but about as long as the three terminal segments together. Segment 8 rather longer than 9; 10 about as long as 9, slightly concave above, and produced into a short point at the sides.

*Dimensions.*

|  |             |
|--|-------------|
| Long. corporis . . . . .                   | 112 millim. |
| „ capitis . . . . .                        | 6 „         |
| Lat. „ . . . . .                           | 3 „         |
| Long. pronoti . . . . .                    | 5 „         |
| „ mesonoti . . . . .                       | 15 „        |
| „ metanoti, cum segmento mediauo . . . . . | 19 „        |
| „ segmenti mediani . . . . .               | 5 „         |
| „ femorum anticorum . . . . .              | 26 „        |
| „ „ medianorum . . . . .                   | 21 „        |
| „ „ posticorum . . . . .                   | 24 „        |

*Hab.* Lizard Island, N.E. coast of Australia.

## LONCHODES CATORI, sp. n.

*Male.* Cylindrical, slender, with long and slender legs. Head, prothorax, and first two joints of the antennæ red; antennæ otherwise rufous-brown. Femora green, red at the base and tip; the tibiæ and tarsi red or reddish, more or less shading into brown above. Anterior femora with one moderate-sized spine beneath, near the extremity, on the inner carina; middle femora with two spinose ridges at the extremity beneath, with three or four red black-tipped spines on each side; hind femora with one tooth, and some smaller denticulations at the extremity beneath. Mesothorax narrowly red at the base, and broadly at the extremity, where it is much expanded. Metathorax narrowly red at the base, and at its extremity for about the same length as the median segment, which is likewise red, with a large square blackish patch covering its basal half. Median segment scarcely one-sixth as long as the metathorax. Abdomen olive-green, narrowly reddish at the ends of the segments, and tinged with rufous towards the extremity.

A specimen which appears to be an immature female of this species is much greener, being merely tinged with rufous on the prothorax, median segment (which wants the dark blotch), and towards the extremities of the meso- and metathorax, and of the femora and abdomen, &c. It measures 70 millim. in length. The dimensions of the male are as follows:—

*Dimensions.*

|  |            |
|--|------------|
| Long. corporis . . . . .                   | 88 millim. |
| „ capitis . . . . .                        | 4 „        |
| „ pronoti . . . . .                        | 3 „        |
| „ mesonoti . . . . .                       | 22 „       |
| „ metanoti, cum segmento mediauo . . . . . | 18 „       |
| „ segmenti mediani . . . . .               | 6 „        |
| „ femorum anticorum . . . . .              | 24 „       |
| „ „ medianorum . . . . .                   | 19 „       |
| „ „ posticorum . . . . .                   | 22 „       |

Sandakan, N. Borneo.



A very pretty species, allied to *L. geniculatus*, Gray, and *geniculosus*, Westw., which I believe to be distinct species; but in both these the head is green. The insect formed part of an interesting collection presented by Douglas Cator, Esq.

CHONDROSTETHUS, gen. nov.

Long and slender, with long and slender legs; head long, bicornuted, antennæ longer than the front legs, at least in male, scape twice as long as broad, depressed and carinated, especially in female; second joint shorter, less depressed, about  $1\frac{1}{2}$  times as long as broad, and narrowed from base to extremity; tibiæ slightly longer than femora; front legs longer than the others, middle legs shortest, all the femora with small terminal teeth beneath; first joint of tarsi longer than all the rest together, except in the middle legs, where they are of about the same length; front femora at base, front tibiæ at base and before the extremity, basal joint of front tarsi, and base of middle tibiæ furnished with long, but not broad, foliations; median segment about half as long as the metathorax, anterior edge straight; metanotum with a rounded warty excrescence on each side at the extremity in the male; hind legs extending about to the extremity of the three segments of the abdomen beyond the basal segment; three terminal segments of abdomen in male of nearly equal length, hardly dilated, the last slightly longer than the two preceding, tectiform, and excavated at the extremity.

CHONDROSTETHUS WOODFORDI, sp. n. (Plate XXXIX. figs. 1, 1 a, ♂; figs. 2, 2 a, ♀.)

Brown; prothorax as long as the head, with a longitudinal groove, and transverse grooves in front and in the middle; there are also several incomplete grooves on each side of the longitudinal one. In the female these grooves are much stronger than in the male, and the back of the prothorax is alternately marked with black and yellowish. In the female, too, the insect is strongly granulated (very slightly in the male), especially on the head, prothorax, and mesothorax; on the lateral borders these take the form of a series of small tubercles. The male is much more slender than the female.

*Dimensions.*

|  | ♂.      | ♀.      |
|--|---------|---------|
|  | millim. | millim. |
| Long. corporis . . . . .                   | 75      | 124     |
| „ pronoti . . . . .                        | 3       | 4.5     |
| „ mesonoti . . . . .                       | 18      | 31      |
| „ metanoti, cum segmento mediano . . . . . | 12      | 19      |
| „ segmenti mediani . . . . .               | 4.5     | 7       |
| „ femorum anticorum . . . . .              | 22      | 33      |
| „ „ medianorum . . . . .                   | 14      | 23      |
| „ „ posticorum . . . . .                   | 20      | 26      |

*Hab.* Solomon Islands (*Woodford*).

The genus *Thrasyllus* was founded by Stål on a male insect from the Philippines, which he called *T. macilentus*. The present species agrees with the characters given by Stål in many respects, especially in the very long antennæ, and the excrescences on the

metanotum; the latter, however, are described by Stål as squamiform rudiments of wings. The tibiæ and tarsi are described as compressed and dilated; but in the male before me they are hardly to be called compressed, and there is only the faintest indication of a dilatation at the extremity of the front tibiæ. As this character is usually much more strongly marked in the females than in the males, the female of Stål's insect would probably more resemble those of the genus *Divippus*; and having both sexes of *C. Woodfordi* before me I have thought it more satisfactory to treat it as the type of a new genus.

#### GREENIA, gen. nov.

Cylindrical; head with two acute spines between the eyes, rising from a ridge; body granulated; legs moderately long and slender, unarmed, except for a small rounded lobe on the upper surface towards the base of the middle femora in the female, terminal segment carinated (at least in female) and ending in a wide obtuse fork.

This curious genus is not closely allied to any other. Bates described and figured both sexes of a Phasmide under the name of *Lonchodes furcatus* in Trans. Linn. Soc. xxv. p. 335, pl. xlv. figs. 5, 6, from Ceylon. Among some *Phasmidæ* recently brought from Ceylon by Mr. E. Ernest Green, to whom the British Museum has been indebted for so many interesting additions to its entomological collections, I find a female of this species, and have much pleasure in calling the uncharacterized genus to which it belongs after Mr. Green, who is, I may mention, at present engaged on a monograph of the *Coccidæ* of Ceylon, a large and practically unworked subject, of great importance to planters and agriculturists. Mr. Green's insect agrees in all essential points with Bates's figure, except that it is apparently less strongly granulated. In the absence of a series, it would be foolish to describe the insect as new, on this doubtful character only.

#### HERMOGENES, Stal.

*Hermogenes*, Stål, Rev. Orth. iii. p. 8, note (1875).

*Prisomera*, pt., Gray, Syn. Phasm. p. 15 (1855); Westw. Cat. Phasm. p. 47 (1859); Brunn. Ann. Mus. Genov. xxxiii. p. 81 (1893).

Under the present genus we may include:—

1. *Lonchodes personatus*, Bates, Trans. Linn. Soc. xxv. p. 336, pl. xlv. fig. 7 (1865), from Bouru.
2. *Phasma femorata*, Stoll, Phasm. p. 44, pl. xiv. fig. 54 (Amboina).
3. *Phasma (Acanthoderus) verrucosum*, De Haan, Orth. p. 136, pl. xiv. fig. 1 (Sumatra).

(The type of *Prisomera*, Gray, is his *spinicollis* from Ceylon, which is not congeneric with these.)

*Female*. Body cylindrical, granulated, not spiny, but sometimes with lobate excrescences on the back; antennæ slender, generally shorter than the front legs; legs short, femora spiny beneath, legs more or less compressed, especially the front tibiæ; all the femora dentated beneath at the extremity; front and intermediate femora and tibiæ more or less foliaceous; first joint of front tarsi not much longer than the second.

## HERMOGENES CRISTATUS, sp. n.

*Female.* Cylindrical, brown, rugose; antennæ testaceous, spotted with brown at the joints. Head with a very slight, quadrifid transverse ridge between the eyes; a raised foliaceous crest, much broken and divided, at the ends of the pro- and mesothorax; two strong spines at the end of the second segment of the abdomen (reckoning the median segment, which is about one-third of the length of the metathorax, as the first), and two long ear-like lobes at the end of the seventh. Antennæ with the scape much flattened. Front femora with a foliaceous expansion of the lateral carinæ beneath, and terminating above in a short strong spine, surrounded by two or three smaller ones. The outer lower carina is produced into a very large cultriform process, followed by a shorter spine. Front femora much widened and compressed, with a very large rounded lobe, towards the extremity above, which is directed forward, and dentated above and in front. Middle femora flattened and foliaceous, with two small rounded projections at the base above, a large one near the middle, directed forward, and dentated above and in front, and a strong tooth at the extremity; this is preceded by a yellowish band. Beneath is a row of strong teeth, decreasing in size towards the extremity. Middle tibiæ with two foliaceous crests, each slightly depressed in the middle, towards each extremity. Hind femora with a strong tooth at the extremity above, and a row of teeth, decreasing in size, towards the extremity below; about the middle is a yellow spot. Hind tibiæ with slight foliaceous expansions on the carinæ at their base below and at their extremity above. Tarsi without foliaceous expansions, the first joint hardly longer or broader than the others.

*Dimensions.*

|  |             |
|--|-------------|
| Long. corporis . . . . .                   | 110 millim. |
| „ capitis . . . . .                        | 5 „         |
| „ pronoti . . . . .                        | 6 „         |
| „ mesonoti . . . . .                       | 27 „        |
| „ metanoti, cum segmento mediano . . . . . | 18 „        |
| „ segmenti mediani . . . . .               | 6 „         |
| „ femorum anticorum . . . . .              | 19 „        |
| „ „ mediaurum . . . . .                    | 15 „        |
| „ „ posticorum . . . . .                   | 20 „        |

*Hab.* Baram District, North Borneo.

Collected by Mr. C. Hose.

Allied to *H. verrucosus*, De Haan, from Sumatra.

## HERMOGENES HOSEI, sp. n. (Plate XL. figs. 1, 1 a.)

*Female.* Cylindrical, dark brown, rugose and granulated; prothorax with a depressed cross, the hinder part rising into a slight median carina, which is continued, rather indistinctly, along most of the thorax and abdomen. Fifth segment of abdomen with a transverse foliaceous raised lobe at the extremity; sixth with a short longitudinal raised foliaceous lobe on each side of the median line near the base of the segment. Front femora with four long foliaceous carinæ beneath, the two middle ones unarmed, the inner one forming an irregular waved row of large rounded serrations, and the outer one with a strong cultri-

form projection, followed by a smaller one, towards the extremity. At the upper extremity of the front femora are some short strong teeth. Front tibiæ much compressed, with raised foliaceous expansions above and below, the upper one expanded into a long lobe, rounded above, towards the base, and terminating in one or more short teeth, one under the other; lower expansion slightly enlarged at its base. Middle femora with two projections near the base above, a large foliaceous expansion near the middle, irregularly serrated above, and followed by a slighter projection; and a very prominent tooth at the extremity; beneath there is a large tooth, followed by some small denticulations towards the extremity. Middle tibiæ with two raised rounded projections towards the base, and three more pointed ones towards the extremity. Tarsi not lobate; the first hardly longer than the others.

*Dimensions.*

|  |             |
|--|-------------|
| Long. corporis . . . . .                   | 111 millim. |
| „ capitis . . . . .                        | 6 „         |
| „ pronoti . . . . .                        | 6 „         |
| „ mesonoti . . . . .                       | 25 „        |
| „ metanoti, cum segmento mediano . . . . . | 18 „        |
| „ segmenti mediani . . . . .               | 6 „         |
| „ femorum anticorum . . . . .              | 19 „        |
| „ „ medianorum . . . . .                   | 16 „        |
| „ „ posticorum . . . . .                   | 19 „        |

*Hab.* Baram District, North Borneo, collected by Mr. C. Hose.  
Allied to the last species.

DIXIPPUS SUMATRANUS.

*Pasma sumatranum*, De Haan, Orthoptera, pl. xiii. fig. 6 (1842).

*Pasma (Bacteria) nodosum*, ♀, De Haan, *l. c.* p. 133 (1842).

*Male.* Slender, cylindrical, reddish brown. Prothorax with a depressed cross, the central line of which is continued on the vertex, and then divides into a Y, the arms of which run to the eyes. The front ends in a slight transverse ridge in front of the eyes, with a rudimentary horn on each side. Segments of the abdomen slightly carinated, more distinctly so towards the apex; the two penultimate segments much expanded, the last twice as long as broad, and cleft nearly to the base, the femora slightly dentated at the extremity of the femora beneath, most strongly on the middle femora.

*Dimensions.*

|  |             |
|--|-------------|
| Long. corporis . . . . .                   | 100 millim. |
| „ capitis . . . . .                        | 4 „         |
| „ pronoti . . . . .                        | 3 „         |
| „ mesonoti . . . . .                       | 23 „        |
| „ metanoti, cum segmento mediano . . . . . | 18 „        |
| „ segmenti mediani . . . . .               | 4 „         |
| „ femorum anticorum . . . . .              | 24 „        |
| „ „ medianorum . . . . .                   | 20 „        |
| „ „ posticorum . . . . .                   | 24 „        |

The British Museum has a long series of both sexes from Baram, North Borneo, collected by Mr. C. Hose. The female is well represented by De Haan's figure; but the male from Java, to which he refers it, is evidently distinct. The males of *Phasmidæ* are very different from the females, and can rarely be satisfactorily paired with them without evidence.

DIXIPPUS SODALIS, sp. n.

*Male.* Long, slender, olive-brown, very finely and closely granulated. Head scarcely longer than broad, with two short horns projecting forward, above and a little in front of the eyes, and with a row of four small tubercles at the hinder extremity above. Antennæ with the scape much thickened, and twice as long as broad; the greater part of the flagellum, except towards the base, is blackish. Front tarsi blackish from beyond the middle of the first joint to the extremity; the first joint is about as long as the three following, which successively diminish in length. Legs slender, with two pairs of large teeth at the extremity of the middle femora beneath, and two very small pairs on the other femora. Abdomen with the terminal segment but slightly expanded. Apical segment cleft to the base, about three times as long as broad.

*Dimensions.*

|  |            |
|--|------------|
| Long. corporis . . . . .                   | 95 millim. |
| „ capitis . . . . .                        | 3 „        |
| „ pronoti . . . . .                        | 3.5 „      |
| „ mesonoti . . . . .                       | 25 „       |
| „ metanoti, eum segmento mediano . . . . . | 18 „       |
| „ segmenti mediani . . . . .               | 4 „        |
| „ femorum anticorum . . . . .              | 25 „       |
| „ „ medianorum . . . . .                   | 15 „       |
| „ „ posticorum . . . . .                   | 21 „       |

*Hab.* Baram District, Borneo.

Collected by Mr. C. Hose.

Closely resembles the male of *D. sumatranus*, with which it was received, but differs by the short horns, and the different shape of the terminal segments of the abdomen.

DIXIPPUS CORNUTUS, sp. n.

*Female.* Cylindrical, brown, speckled, and varied with grey; finely and thickly granulated. Head oblong, scarcely narrowed behind, and hardly granulated; face mostly green; two large horns on the vertex between the eyes, bordered with black on the inside; and there is a short black streak between each horn and the eye. Prothorax with cross-shaped grooves, and two more transverse grooves on the front half; behind it a well-marked but slender carina runs down the rest of the body. Mesothorax slightly expanding behind, with lateral carinæ; and towards its extremity two short black carinæ run backward from each side, meeting on the central carina at four-fifths of its

length. Median segment one-third as long as the metanotum, the front curving slightly backward on the sides; at about half its length is a slightly marked brown carina, on each side, curving inward to the middle. Segment 7 of abdomen only slightly shorter than 6; segment 8 about two-thirds as long as 7, and as long as 9 and 10 together; 10 rather longer than 9, and widely concave at the extremity above. Legs short and thick, slightly compressed; all the femora lobate-dentate at the extremity beneath on each carina, and the base of the tibiæ furnished with a central lobe beneath, which fits in between the femoral lobes; first joint of the front tarsi strongly lobate above; middle and hind femora with the grey dusting forming a broad band towards the extremity; segment 7 of the abdomen moderately lobate beneath on the lateral carinæ at the extremity; segment 6 only slightly so.

*Dimensions.*

|   |             |
|---|-------------|
| Long. corporis . . . . .                    | 115 millim. |
| ,, capitis . . . . .                        | 6 ,,        |
| ,, pronoti . . . . .                        | 5 ,,        |
| ,, mesonoti . . . . .                       | 24 ,,       |
| ,, metanoti, cum segmento mediano . . . . . | 20 ,,       |
| ,, segmenti mediani . . . . .               | 5 ,,        |
| ,, femorum anticorum . . . . .              | 26 ,,       |
| ,, ,, medianorum . . . . .                  | 18 ,,       |
| ,, ,, posticorum . . . . .                  | 20 ,,       |

*Hab.* Hong Kong.

Not unlike *D. nodosus*, De Haan, but with shorter legs, much longer horns, and the middle femora not lobate above.

DIXIPPUS (?) INSULARIS, sp. n.

*Female.* Cylindrical. Brown, granulated, head with a low transverse crest on the vertex, between the eyes, curving downward and inward at the ends; a row of raised warts, larger than the others, before the extremity of the head. Scape of the antennæ very broad and flattened, broadest in the middle, and about half as long again as broad; down the middle of the body runs a low median carina, except on the prothorax, which is marked with a shallow cross-shaped depression. Front femora beneath with a central ridge, and a pair of outer carinæ, closely approximating, at the sides, the outermost denticulated towards the extremity, and the innermost serrulated throughout its length. The front tibiæ are greatly compressed, and the upper ridge is slightly waved and at the extremity it projects obtusely forward. The first joint of the front tarsi has a flattened foliaceous ridge above, which raises it to the height of the tibiæ; it is nearly as long as the remaining joints together. The four hinder femora are slightly denticulated at the extremity beneath; and their tibiæ are slightly lobate near the base beneath, and are also slightly thickened towards the extremity. The median segment is rather long

for true *Divippus*; and the fifth and sixth segments of the abdomen are somewhat expanded.

*Dimensions.*

|  |     |         |
|--|-----|---------|
| Long. corporis . . . . .                   | 140 | millim. |
| „ capitis . . . . .                        | 6   | „       |
| „ pronoti . . . . .                        | 6   | „       |
| „ mesonoti . . . . .                       | 32  | „       |
| „ metanoti, cum segmento mediano . . . . . | 20  | „       |
| „ segmenti mediani . . . . .               | 8   | „       |
| „ femorum anticorum . . . . .              | 33  | „       |
| „ „ medianorum . . . . .                   | 22  | „       |
| „ „ posticorum . . . . .                   | 27  | „       |

*Hab.* Thursday Island.

The type is not in very good condition, but I think it well to describe it, as very few *Phasmidæ* are known from the New Guinea district.

It has considerable resemblance to *D. crawangensis*, De Haan, from Java, but is much stouter.

PHASGANIA EVERETTI, n. g. et sp. (Plate XL. figs. 2, 2 a.)

*Female.* Cylindrical, brown, granulated dorsally and laterally as far as the middle of the mesothorax, with larger lateral tubercles on the sides of the mesothorax. Head unarmed, rather long, rounded and depressed, about as long as the prothorax, the rest of the body with a slight longitudinal carina, except towards the end of the mesothorax, which is much dilated behind, and marked with several slight transverse carinæ, as is also the median segment, and the extremities of the metathorax and of most of the abdominal segments. Prothorax scarcely thickened, and metathorax not at all. Median segment about one-fourth as long as the metathorax. Abdomen with segments 3–6 much thickened, nodose, the 7th as long as the 6th, but only half as broad, even at the extremity, which is broadest; the 8th narrower, and about two-thirds as long as the 7th; the 9th broader than long; the 10th narrower, slightly longer than the 9th; and the 11th forming a spine, longer than the 9th and 10th together, and projecting far beyond the operculum. Legs, especially the two front pairs, much compressed and carinated, but the carinations are only slightly lobate towards the base of the middle tibiæ beneath; the first joint of the front tarsi, however, which is longer than the three following joints, bears a foliaceous expansion, as in *Divippus*. The middle femora are armed at the extremity beneath with a closely approximating pair of two very strong teeth; the front and hind femora are only armed with one conspicuous tooth and some smaller denticulations.

*Dimensions.*

|  |             |
|--|-------------|
| Long. corporis . . . . .                   | 135 millim. |
| „ capitis . . . . .                        | 6 „         |
| „ pronoti . . . . .                        | 5 „         |
| „ mesonoti . . . . .                       | 31 „        |
| „ metanoti, cum segmento mediano . . . . . | 24 „        |
| „ segmenti mediani . . . . .               | 7 „         |
| „ femorum anticorum . . . . .              | 30 „        |
| „ „ medianorum . . . . .                   | 21 „        |
| „ „ posticorum . . . . .                   | 24 „        |

*Hab.* N.W. Borneo (*Everett*).

This interesting species, which I have named after Mr. A. Everett, who has done such good work in collecting in the East, is allied to *Dicippus*, but its rounded head and the peculiar formation of the abdomen will readily distinguish it. In several respects we find a resemblance to it in the female of (*Lonchodes*) *brevipes*, Gray, which has the metathorax not expanded, but some of the abdominal segments swollen, and the last slightly produced over the operculum. (*L.*) *brevipes*, and perhaps (*L.*) *uniformis*, Westw., may ultimately form a new genus allied to *Phasgania*.

STHENOBÆA TUBERCULATA, sp. n.

*Female.* Cylindrical, moderately stout, rufo-testaceous; antennæ spotted with black at the joints; head long, slightly attenuated behind, with a transverse crest in front, between the eyes, slightly raised at each angle; front femora obtusely serrated above, and front tibiæ both above and below; first joint of the front tarsi rather longer than the three following, and furnished with a leaf-like expansion; middle and hind femora serrated or rather waved in a similar manner, and with leaf-like expansions on the upper surface of the femora near the base, largest on the middle femora. Several conspicuous black tubercles arranged, not uniformly, but irregularly in rows on the upper surface and sides of the thorax and abdomen, and much more numerous in a row on each side of the median line on the under surface; operculum very broad and concave, as long as the terminal segment.

*Dimensions.*

|  |            |
|--|------------|
| Long. corporis . . . . .                   | 91 millim. |
| „ capitis . . . . .                        | 5 „        |
| „ pronoti . . . . .                        | 3 „        |
| „ mesonoti . . . . .                       | 23 „       |
| „ metanoti, cum segmento mediano . . . . . | 11 „       |
| „ segmenti mediani . . . . .               | 3 „        |
| „ femorum anticorum . . . . .              | 28 „       |
| „ „ medianorum . . . . .                   | 23 „       |
| „ „ posticorum . . . . .                   | 22 „       |

*Hab.* Rejang River, Sarawak.

Presented by Mr. H. Brooke Low.

A rather isolated species.



## BACTRICIA, gen. nov.

Apterous in both sexes: very long and slender; head with two strong spinous processes on the vertex in the male; lamellated processes in the female placed near together; legs pubescent, especially the tarsi; first joint of tarsi as long or longer than all the rest, not appendiculated, but carinated in the female; legs unarmed in male, armed with strong subtriangular spines in female, on the carinæ above and below; median segment one-fifth the length of the metanotum in male, one fourth in female; styles of male large, broad, almost spatulate, and strongly curved, crossing each other; operculum of female very long, longer than the last three segments of the abdomen together; obtusely rounded and slightly expanded at the extremity.

The type is

BACTRICIA TROPHIMUS. (Plate XXXIX. figs. 3, 3 a, ♂; figs. 4, 4 a, ♀.)

♂. *Bacteria Trophimus*, Westw. Cat. Phasm. p. 30. n. 85. pl. v. fig. 5 (1859).

♀. *Bacteria bituberculata*, Westw. l. c. p. 180. n. 467 (1859); Schaum, Monatsb. Akad. Wiss. Berlin, 1857, p. 423; Peters, Reise nach Mossambique, v. p. 558 (1862).

The female figured is from Natal, but appears to agree with the description given by Westwood of the typical specimen in the Berlin Museum. Unlike as the sexes appear at first sight, they present so many points of resemblance on a close examination, in everything except the form of the horns, and in the appendages of the legs in the female, that I feel justified in placing them together. Besides the typical male, there are two other males very closely resembling it, also from Natal, in which the cephalic horns are reduced to mere tubercles. In the absence of a sufficient series, I content myself with simply recording the fact.

I am not certain of the real affinities of this genus, and place it in the *Lonchodina* with some doubt.

There are one or two other East-African species allied to *Bactricia* in the British Museum, but in poor condition and only in single specimens. One of these, from Natal, appears to be referable to *Phibalosoma calametum*, Bates (Trans. Linn. Soc. xxv. p. 341), and differs from *Bactricia* in the sides of the tarsi being raised.

In (*Phasma*) *calcaratum*, De Haan, the median segment is likewise very short.

PROMACHUS SORDIDUS, sp. n. (Plate XL. figs. 4, 4 a.)

*Female*. Dark brown, rugose, with a depressed line on the head and prothorax, and a crossed depression on the latter; the rest of the body strongly carinated on the median line. Femora with three or four rows of small teeth on the carinæ. Head with two strong spines at the back, followed by two in front of the prothorax and two behind; mesonotum with three strong spines on each side, two central ones just behind the level of the middle lateral ones, and two more central ones at the extremity. Metathorax, median segment, and the remaining segments of the abdomen all with a single spine towards the extremity, on the central carina, gradually diminishing in length towards the end of the body. Metathorax with a long spine, preceded by a short one on the sides, and another strong spine lower down, in front of the hind coxæ. Segments 2-6

of the abdomen each with a moderately long spine on the sides. Abdominal spine extending for nearly half its length beyond the operculum.

*Dimensions.*

|  |     |         |
|--|-----|---------|
| Long. corporis . . . . .                   | 55  | millim. |
| „ capitis . . . . .                        | 4   | „       |
| „ pronoti . . . . .                        | 3.5 | „       |
| „ mesonoti . . . . .                       | 19  | „       |
| „ metanoti, cum segmento mediano . . . . . | 6   | „       |
| „ segmenti mediani . . . . .               | 3   | „       |
| „ femorum anticorum . . . . .              | 15  | „       |
| „ „ medianorum . . . . .                   | 13  | „       |
| „ „ posticorum . . . . .                   | 16  | „       |

*Hab.* Thursday Island. Collected by the late Rev. R. Toy. Described from two specimens, in one of which, which is slightly smaller than the type, the spines and denticulations are less strongly developed.

Allied to *P. doreyanus*, Bates, but this species has the legs unarmed, except slight denticulations at the ends of the femora beneath; there is only one spine instead of two at the back of the metathorax; the mesothorax is more slender, and the first pair of lateral spines is wanting, besides other differences.

BACUNCULINÆ.

Several genera referred by Brunner de Wattenwyl to his family *Bacteriidae* would be more naturally placed here, such as *Bacteria*, Serv., and *Phanocles*, Stål, which seem to be nearly allied to *Calynda*, Stål. In the place of Brunner's *Bacteriidae*, I propose to institute a subfamily *Palophinae*, to include large species, with winged males.

CAULONIA SPINOSISSIMA, sp. n. (Plate XL. figs. 5, 5 a.)

*Female.* Moderately stout, greenish brown, the sutures of the prothorax and the median carina on the meso- and metathorax marked with a black line, which is expanded on the front of each. Head greenish, short, vertical, face rather long; a black median line, on each side of which are three long spines and a longer and more oblique one outside the second. Antennæ very long and slender. Prothorax bilobate, with two spines on each lobe, the front spines separated by the median depression, but beyond the transverse depression the two spines are central, with a groove running on each side beyond them. Mesothorax with six longitudinal rows of spines, of four each, but not placed under each other; a double central row separated by the median line; a longer row lower down, and a lateral row of short ones. Metathorax similarly armed, but the central and lower spines numbering three each, and the intermediate row of large spines two; there are also two central spines on the median segment, and two in front of the hind coxæ. Second segment of the abdomen (reckoning the median segment as the first) with two spines at the base, two at the extremity, and one on each side below the latter. Third segment with the spines similarly arranged, but larger, and the terminal central ones preceded by two small ones; segments 4, 5, and 6 similarly armed at the extremity only; but the spines, except those at the sides, become gradually smaller, and

on 6 the lateral spines are absent. Segment 7 has only two short central terminal spines. The remaining segments are more slender, and unarmed. Operculum large, extending considerably beyond the terminal segment. Legs rather long and slender; front femora with a single row of triangular teeth beneath, placed at about equal distances; the 4th largest; four hinder femora with two rows of larger ones of five each on the under surface. On the underside of the body there is a double row of short median spines.

*Dimensions.*

|  |            |
|--|------------|
| Long. corporis . . . . .                   | 58 millim. |
| „ capitis . . . . .                        | 2.5 „      |
| „ pronoti . . . . .                        | 3 „        |
| „ mesonoti . . . . .                       | 14 „       |
| „ metanoti, cum segmento mediano . . . . . | 11 „       |
| „ segmenti mediani . . . . .               | 2.5 „      |
| „ femorum anticorum . . . . .              | 20 „       |
| „ „ medianorum . . . . .                   | 13 „       |
| „ „ posticorum . . . . .                   | 20 „       |

*Hab.* Archidona.

This species appears to belong to *Caulonia*, but is much more spiny than any previously described. *C. bifolia*, Stål, probably approaches it most nearly in this respect.

PALOPHINÆ.

This subfamily includes, *inter alia*, a series of interesting African *Phasmidæ*, in which the males are slender, with large wings; and the females are stout, with shorter wings. They have usually foliaceous or large spiny prominences on the legs, and the head is crested, or more or less spined. The terminal segment is broad, slightly concave at the extremity, and extends far beyond the operculum in the female. They are generally classed under the genus *Palophus*, Westwood, but have been divided into several genera. The genera already named are the following. (How far they are truly distinct will best be seen when we receive more specimens of both sexes.)

PALOPHUS, Westw.

*Palophus*, Westw. Cat. Phasm. p. 90 (1859); Brongniart, Nouv. Ann. Mus. Paris (3) xii. p. 193 (1892).

The types are *P. Haworthii*, Gray (South Africa), and *P. centaurus*, Westw. (West Africa). They have a long double pointed crest on the vertex, between the eyes, and the thorax, though strongly granulated, has no raised spines. The second joint of the front tarsi is lobate as well as the first. I have both sexes of these species before me, but only females of any of the allied forms. These two species are perhaps not congeneric; for in the female of *P. Haworthii* the wings are no longer than broad, while in that of *P. centaurus* they are nearly twice as long as broad, and the mesothorax is much longer and slenderer in proportion than in *P. Haworthii*. But I do not propose to separate these species generically, until more specimens are obtained. I imagine that *Palophus minotaurus*, Gerstaecker, from the Gold Coast, is probably congeneric with *P. centaurus*.

## ISCHNOPODA, Grandidier.

*Ischnopoda*, Grandidier, Rev. Zool. xxi. p. 292 (1869); Lucas, Ann. Soc. Ent. Fr. (4) ix. p. 430 (1870).

The type of this genus is *I. Reyi*, Grandid., from the Zambesi. To the same genus belong *Bactrododema brevitarsis*, Stål, from Damara-land, and a fine new species from Tanganyika, which I describe below. The females vary considerably in comparative length and breadth of wing, but have always at least two strong diverging spines (not symmetrical) about the middle of the mesothorax, and the boss on the tegmina is rather long and pointed. The first joint only of the front tarsi is lobate.

## ISCHNOPODA EPISCOPALIS, sp. n.

*Female*. Grey, varied with darker, a high double laminated crest, obtuse above, between the eyes; head thickly tuberculate, the rest of the body coarsely granulated and striated, the rugæ forming irregular striæ on the pro- and mesothorax; two sharp spines, black at the tip, standing obliquely outwards before the middle of the mesothorax; segments 5 and 6 of the abdomen with a slight crest on each side before the extremity; tegmina grey, rather long, with a high rounded elevation near the base, tipped with blackish; wings with the costal area grey, indistinctly varied with darker, and broadly black at the base; wings long and broad, black, with irregular yellowish hyaline bands, converging, anastomosing, and disappearing beyond the middle of the wing. Legs more or less banded with grey and brown; front femora with three triangular elevations below and one about the middle, above; front tibiæ with two raised crests above, and first joint of front tarsi laminated; the first and fifth joints (without the claws) are of about equal length, and longer than joints 2-4 together. Antennæ a little longer than the front femora. Middle femora with large triangular elevations near the base, one pair below, and a single one, just beyond it, above; before the extremity is a pair of smaller teeth on the carinæ beneath. Middle tibiæ with two crests above; first joint of middle tarsi as long as the three following. Hind femora curved, toothed beneath at the extremity, and very slightly so above; hind tibiæ with from two to four triangular teeth above, and sometimes a small one towards the base below; first joint of hind tarsi rather longer than the three following together.

*Dimensions.*

|                                   |             |
|-----------------------------------|-------------|
| Long. corporis . . . . .          | 215 millim. |
| „ capitis . . . . .               | 11 „        |
| „ pronoti . . . . .               | 11 „        |
| „ mesonoti . . . . .              | 36 „        |
| „ tegminum . . . . .              | 25 „        |
| Exp. al. . . . .                  | 170 „       |
| Long. femorum anticorum . . . . . | 53 „        |
| „ „ medianorum . . . . .          | 39 „        |
| „ „ posticorum . . . . .          | 46 „        |

*Hab.* Tanganyika.

This fine species is closely allied to *I. Reyi*, Grandidier, as figured by Brongniart, but is rather smaller, and the wings are much larger; it is probably quite distinct. There are two female specimens in the collection of the Museum.

Since the above description was written, another new species of this genus has been received from Somali-land, obtained by Mr. and Mrs. Lort Phillips, after whom I have much pleasure in naming it. Mrs. Phillips rescued it from a tame monkey, which caught it and was about to eat it.

ISCHNOPODA PHILLIPSI, sp. n. (Plate XL. figs. 3, 3 a.)

*Female.* Grey, head strongly tuberculate, and with a high double laminated crest above, between the eyes. Behind the crest a narrow but well-marked groove runs backward nearly to the extremity of the prothorax; the rest of the thorax and the basal segments of the abdomen are marked with a slight median carina. The insect is more or less granulated, most strongly on the head and thorax, and the prothorax is marked with a deep transverse groove just behind the front legs. Mesothorax with two strong spines at two-fifths of its length, opposite to each other and nearly upright; behind the left-hand one is a smaller tubercle. Abdomen with segments 4-7 with slight crests on each side before the extremity, those on the 5th segment largest; tegmina grey, moderately long, with a rather pointed pyramidal elevation near the base; costal area of wings grey, with a black band near the base, and a slight elevation towards the costa before the middle; wings about half as long as broad, black, with yellowish-hyaline spots, running from the costa in irregular rows, fading away beyond the middle, at least on the outer half of the wings, right front femora with three laminations above, the terminal one largest, and another beyond the middle in front; left with only the upper terminal one slightly marked, and the front one reduced to a spine; right front tibiæ with two strong triangular laminae on the front edge; left with 3 smaller ones, the second double; first joint of tarsi about as long as the remainder, and crested for its whole length; middle femora grey, banded with brown, and with foliaceous elevations towards the base and extremity beneath, and two before the middle, above; tibiæ with two foliaceous crests above, one towards the base, the other beyond the middle; hind femora with a triangular elevation towards the extremity beneath, and tibiæ with three or four above.

The metathorax and median segment are unusually well separated in this species.

*Dimensions.*

|                                   |             |
|-----------------------------------|-------------|
| Long. corporis . . . . .          | 185 millim. |
| „ capitis . . . . .               | 8 „         |
| „ pronoti . . . . .               | 10 „        |
| „ mesonoti . . . . .              | 30 „        |
| „ metanoti . . . . .              | 9 „         |
| „ segmenti mediani . . . . .      | 17 „        |
| „ tegminum . . . . .              | 23 „        |
| Exp. al. . . . .                  | 114 „       |
| Long. femorum anticorum . . . . . | 52 „        |
| „ „ medianorum . . . . .          | 41 „        |
| „ „ posticorum . . . . .          | 43 „        |

*Hab.* Somali-land.

Closely allied to *I. brevitarsis*, Stål, but in that species the spines on the mesothorax are oblique, and not parallel; the wings are shorter and the vitreous spots less numerous, &c., &c.

#### BACTRODODEMA, Stål.

*Bactrododema*, Stål, Öfv. Vet.-Akad. Förh. xv. p. 308 (1858); Bihang Svensk. Akad. ii. (17) p. 14 (1875), iii. (14) p. 12 (1878); Recens. Orth. iii. p. 32 (1875).

The type of this genus is *B. liarata*, Stål, from Damara-land. The British Museum possesses two females from the Transvaal, which agree with Stål's description, except that he does not mention the spines on the mesothorax, of which there is a large central pair, and, in one specimen, a shorter pair between these and the front of the mesothorax. From *Ischnopoda* the genus differs in its much shorter, broader, and more lacerated cephalic crests, and in the fasciculated crests which terminate several of the middle segments of the abdomen, which, in *Ischnopoda*, have only a single small leaflet on each side.

*Cyphocrania aestuans*, Westwood, and *Bactrododema miliaris* and *B. Welwitschi*, Bolivar, may be referred provisionally to *Bactrododema*; but here the cephalic crests are still further reduced, almost to spines. On the fifth segment of the abdomen in two specimens of this section before me is a terminal raised crest.

#### ENETIA SPINOSISSIMA.

*Enetia spinosissima*, Kirb. Ann. Nat. Hist. (5) viii. p. 151 (1891).

*Hab.* Madagascar.

This fine insect is evidently allied to *Achrioptera fallax*, Coq. (Ann. Soc. Ent. France, (4) i. p. 495, pl. 9. fig. 1, 1860); but can hardly be the female of that species, or even congeneric. Both genera, however, belong to the *Palophinae* rather than to the *Acrophyllinae*, though their short spiny legs, and the long operculum of *Enetia* ally them to the latter subfamily.

#### ACROPHYLLINÆ.

##### VASILISSA, gen. nov.

Male slender, winged; female (perhaps immature) with tegmina only; front legs much longer and slenderer than the others; first joint of their tarsi as long or longer than all the rest together; four hinder legs much shorter, of about equal length; the femora and tibiæ armed with short spines; the basal joint of the tarsi as long or longer than the three following joints, which successively diminish in length; styles of the male shorter than the last segment; of the female about two-thirds as long as the last segment, slender, pointed; operculum very long, pointed at the extremity.

This genus appears to be allied to *Diura*, Gray.

## VASILISSA WALKERI, sp. n.

*Male*. Pale ochreous, perhaps green during life, especially the tegmina; antennæ 24-jointed, scape oblong, about twice as long as broad, the second joint annular, the fourth scarcely longer than broad, the third, fifth, and sixth about twice as long as broad, but increasing in length slightly and progressively; the following joints linear, first increasing and then decreasing in length, the sixth terminal ones much shorter, and therefore comparatively thicker than the others; terminal joint pointed. Head and prothorax of about equal length; mesothorax nearly four times as long as the prothorax; four hind femora with three rows of short black spines below, and an incomplete row of from 2 to 6 placed widely apart on the basal half of the middle line above; four hinder tibiæ set with short hair, and furnished with one row of short black spines beneath. Tegmina and costal area of wings probably green in life. Wings rather short, subhyaline, with two round brown spots on each of the cross-nervures.

*Female* (described from an immature specimen in which the wings are not developed) similar, but much stouter; the spines on the legs are less numerous, especially on the upper surface of the femora, where they are reduced to two. The antennæ are much shorter than in the male, the longest joint being the 11th, and the length of the others rapidly decreasing towards the base and tip. In the female the hinder lobe of the median segment is pointed, and almost as long as the segment itself; in the male it is rather more than half as long, and sends off a ridge which extends to the front of the median segment.

*Hab.* Queen's Islet, N.W. Australia.

Collected by Mr. J. J. Walker, R.N.

*Dimensions.*

|                                      | ♂.<br>millim. | ♀.<br>millim. |
|--------------------------------------|---------------|---------------|
| Long. corporis . . . . .             | 85            | 135           |
| „ capitis . . . . .                  | 4             | 7             |
| Lat. „ . . . . .                     | 3             | 4             |
| Long. antennarum . . . . .           | 27            | 19            |
| „ pronoti . . . . .                  | 3             | 5             |
| „ mesonoti . . . . .                 | 14            | 25            |
| „ mctanoti, eum segmento mediano . . | 12            | 16            |
| „ segmenti mediani . . . . .         | 7             | 9             |
| „ femorum anticorum . . . . .        | 25            | 32            |
| „ „ medianorum . . . . .             | 18            | 21            |
| „ „ posticorum . . . . .             | 22            | 22            |
| „ tiliarum antiearum . . . . .       | 25            | 36            |
| „ „ medianarum . . . . .             | 15            | 20            |
| „ operculi . . . . .                 | —             | 13            |

## XENOMACHES, gen. nov.

*Male.* Antennæ extending a little beyond the front femora, 24-jointed; scape and 3rd joint about twice as long as broad, 2nd and 4th joints hardly longer than broad, the rest gradually increasing in length to the 15th, the middle joints being long and cylindrical; the 16th is shorter than the 15th, but the 17th is nearly as long; the next five gradually shorten; the 23rd is again longer, and the terminal joint longer still. The head is long, not narrowed behind, convex above. The prothorax, mesothorax, and sides of the metathorax are set with long conical spines; the front femora are armed with a double row of strong spines beneath, the middle femora only with one or two towards the extremity, and the hind femora with a row on the central ridge, but only one or two at the extremity of the lower lateral ridges. Hinder legs rather short and stout; front legs long; first joint of tarsi nearly as long as the remainder; in the other pairs it is much shorter. Pulvilli very large. The mesothorax is nearly three times as long as the prothorax, and slightly widened behind; the median segment is nearly twice as long as the metanotum. The abdomen is cylindrical, the segments are longer than broad, and the middle ones much thickened; it then tapers rapidly to the extremity, and the cerci are very long, slender, and pointed. The tegmina and wings are rudimentary in the specimens before me.

This genus is allied to *Rhaphiderus*, from which its much stouter build, shorter antennæ, and rudimentary organs of flight will easily distinguish it. The types of *Rhaphiderus* inhabit the Mauritius. The new genus *Xenomaches* is founded on the following species from Rodriguez:—

## XENOMACHES INCOMMODUS.

*Bacillus incommodus*, Butler, Ann. Nat. Hist. (4) xvii. p. 410 (1878); Phil. Trans. clxviii. p. 148, pl. liv. figs. 4, 4 a-c (1876).

As Dr. Butler has already described and figured this insect, it will not require further notice here.

## MEGACRANIA PHELAUS.

*Platyserania phelaus*, Westwood, Cat. Phasm. p. 113. n. 288, pl. xxvii. fig. 5 (1859).

The original type of this species (a female from Fiji) is in the British Museum. Three more specimens of what appear to be the same species, from the Solomon Islands, have lately been added. They are less discoloured than the type; the head, legs, and thorax are green, and the abdomen light mahogany-brown, with irregular longitudinal yellowish-grey markings, and shading into darker brown towards the ends of the segments. The male differs little from the female, except in being more slender, and in the greater expanse of the wings (nearly 4 inches).



## MEGACRANIA BATESII, sp. n.

*Platycrenia alpheus*, var., Bates, Trans. Linn. Soc. Lond. xxv. p. 347 (1865).

The type of *M. alpheus*, Westwood, from Ceylon, has the thorax but slightly granulated, the tegmina nearly round, and the hind wings very short: "tegm. lin.  $7\frac{1}{2}$ , alar. expans. lin. 26." But in all the specimens from the Malayan and Papuan Islands the thorax is very strongly granulated, the elytra are more oval, and the wings are much larger. All the specimens in the British Museum are females: they are from the Solomon Islands, Aru, and Kei Dulan. The Philippine specimens, one of which is immature and the other has damaged wings, probably belong to this species. Bates mentions specimens from Goram, Gilolo, and New Guinea, and describes a supposed male from Amboina. The dimensions of the tegmina and wings (on the same scale as Prof. Westwood's measurements) are as follows in the Solomon Island specimen, which is a very fine one, measuring upwards of 5 inches in length:—Length of tegmina, 8 lines; expanse of wings, 2 in.  $10\frac{1}{2}$  lines.

## ARRHIDÆUS STÄLI, sp. n.

*Male*. Slender. Head black, with a large reddish spot in front of the vertex, extending from before the antennæ (the two basal joints of which are likewise reddish) to one-third of the distance between the eyes and the occiput; this patch is **W**-shaped behind. Prothorax and metathorax black or deep chocolate-brown, with a broad rufo-testaceous stripe on each side of the upper surface; the space between is dotted with the same colour. Abdomen luteous, brown above, except on the last four segments; the last three, however, have an irregular reddish stripe in the middle line above, and the cerci are red, lined with yellow on the sides. Tegmina and wings blackish, with yellow costa and nervures. Wings reaching nearly to the end of the sixth segment. Coxæ black, lined or spotted with yellow; femora very slightly denticulated before the extremity.

*Female* rather stout, yellowish green, head with a broad black band on the sides, expanding in front of the eyes, and extending, varied with yellow, over the upper part of the face; coxæ striped with black below, and front coxæ also above; legs pubescent, reddish, spotted with yellow; middle femora towards the base, and hind femora, very finely denticulated; tegmina and wings brown or reddish brown, with the costal area and the nervures brown. Wings short, only just passing the fourth segment of the abdomen; abdomen wide in the middle, and then tapering; the segments of nearly equal length, except the last three, of which the middle one is nearly twice as long as the other two, which are much shorter than the preceding segments of the abdomen.

|                               | <i>Dimensions.</i> |         |
|-------------------------------|--------------------|---------|
|                               | ♂.                 | ♀.      |
|                               | millim.            | millim. |
| Long. corporis . . . . .      | 60                 | 86      |
| „ capitis . . . . .           | 5                  | 10      |
| „ pronoti . . . . .           | 3                  | 5       |
| „ mesonoti . . . . .          | 10                 | 16      |
| „ femorum anticorum . . . . . | 24                 | 30      |
| „ „ medianorum . . . . .      | 12                 | 15      |
| „ „ posticorum . . . . .      | 15                 | 20      |

*Hab.* Albay, N.E. Luzon (*Whitehead Expedition*).

Seems to be intermediate between *A. palinurus*, Westw., and *A. nigricornis*, Stål. A species which belongs to this genus, but which has not yet been referred to it, is *Phasma rosea*, Stoll.

CTENOMORPHA ALBOPUNCTATUM, sp. n.

*Male.* Greenish brown, probably green during life; head with 7 fine longitudinal lines behind, 5 ferruginous, and the outermost but one on each side grey. Mesothorax with 6 or 7 sharp black spines, irregularly paired, and one or two smaller ones; front legs much longer than the others, the femora very finely denticulated above and below; four hind femora with three rows of well-marked spines on the lower surface. Tegmina, and costal area of wings greenish grey, finely reticulated with yellow; tegmina with a black spot on the hump, and a very conspicuous round whitish spot towards the inner margin. Costal area of wings with a short black basal streak; the rest subhyaline, with brown spots on the nervures. Cerci short, oval, compressed. Costa of tegmina and wings with an ivory-white stripe.

*Dimensions.*

|                          | millim. |
|--------------------------|---------|
| Long. corporis . . . . . | 83-87   |
| „ tegminum . . . . .     | 8-12    |
| Exp. al. . . . .         | 89      |

*Hab.* Queensland.

I suspect that *Diura briareus*, Gray, is the female of this species, in which case the name *briareus* must be retained for it.

HETEROPTERYGINÆ.

Brunner calls this subfamily *Cladomorphidæ*, owing to Stål having incorrectly used the name *Cladomorphus*, Gray, in a different sense to Serville.

HETEROPTERYX AUSTRALIS, sp. n.

*Male.* Dark brown, striped with testaceous on the head, prothorax, and mesothorax before the wings. Head with 12 spines; two rows of four very long spines towards the back; two shorter spines in front of these, nearly in a line with the outer ones; and two very short ones close together in the median line, beyond the level of the three in front. Prothorax bordered all round, the central part divided equally into two, of which the front lobe bears two very long sharp spines, and the hind one only a few tubercles; the lateral borders have three spines, one at the angle in front, another a little within the hind border; there is also a short one on the pleura lower down. Mesothorax with several longitudinal rows of very large spines; the central series consists of a pair in front, a pair in the middle, and a cluster of four between the bases of the tegmina. On the lateral borders of the central ridge is a strong spine in front, and three or four tubercles behind; on the

pleura, and on the outer side of the mesopectus, are rows of three large spines on each, besides numerous tubercles. On the central line of the meso- and metapectus is a well-marked carina, attenuated in front, and on the metapectus are four strong spines on each side, besides smaller ones in the middle. The tegmina have a short spine at the base; the base is black, except along the costa; the outer half is testaceous. There is a strong ridge over the black portion; the testaceous portion is partly reticulated with black. On the metapleura is a very strong spine below the middle of the wings, a shorter one more in front, and several strong ones along the lateral ridge. Beyond the wings, which, so far as can be seen, are fusco-hyaline, with reddish nervules, are two strong spines in the middle, on each of the two following segments, besides numerous small ones. The lateral ridges are also thickly spined. The extremity of the abdomen (the last four segments) is much enlarged in the middle. There are four strong spines, gradually diminishing, besides smaller ones on most of the segments of the abdomen; the last four segments being almost destitute of spines or even tubercles both above and below. The coxæ, femora, and tibiæ are strongly spined on nearly all the carinæ and on the fore hinder legs, on the front legs more sparingly. On the hinder ones, numerous small teeth fill up the interspaces between the others, which are often rather wide apart.

The *female* is a dark brown insect, spined nearly as in the male, but larger and more bulky. It differs from that of *H. Dehaanii*, Westw., by its much larger tegmina, the larger and more regular series of spines on the sides of the abdomen, and the much stronger spines on the legs, &c.

*Dimensions.*

|                               | ♂.      | ♀.      |
|-------------------------------|---------|---------|
|                               | millim. | millim. |
| Long. corporis . . . . .      | 85      | 104     |
| „ capitis . . . . .           | 7       | 9       |
| „ pronoti . . . . .           | 8       | 11      |
| „ mesonoti . . . . .          | 14      | 17      |
| „ tegminum . . . . .          | 16      | 22      |
| „ femorum anticorum . . . . . | 21      | 22      |
| „ „ medianorum . . . . .      | 17      | 23      |
| „ „ posticorum . . . . .      | 25      | 35      |

*Hab.* Australia (locality not specified).

PSEUDOPHASMINÆ.

Genus PSEUDOPHASMA.

*Phasma*, St.-Farg. & Serv. (nec Illiger), Encycl. Méthod., Ent. x. p. 100 (1828).

The type of *Phasma*, Illiger, was fixed by Latreille as *Mantis rossia*, Fabricius, which was subsequently taken as the type of *Bacillus*, St.-Farg. & Serv. They took *Mantis necydaloides*, Linn., as the type of *Phasma*, and have been followed in this by recent

authors; but now that the error has been discovered, the apterous genus *Bacillus* (an inconvenient name at best) sinks as a synonym of *Phasma*; and the winged genus *Phasma*, auct., with *uecydaloides* as the type, may be called *Pseudophasma*. This will involve a little alteration of the subfamilies, for Brunner's *Bacillidæ* must now be called *Phasminæ*, and his *Phasmidæ* must be called *Pseudophasminæ*.

STRATOCLES BOGOTENSIS, sp. n.

*Male*. Black. Head black above, antennæ black, pubescent, face and under surface rufous; ocelli yellow. Two yellow lines run from the ocelli, and two more on each side, one behind each eye, and another, broader, below each eye, all slightly converging to the occiput; there is a green spot above each antenna, and a slender green line at the end of the scape. Prothorax and mesothorax with a green stripe on the back, partly bifid in front; the lateral ridge of the prothorax is also marked with a narrow green line. Coxæ yellow, femora testaceous, tibiæ and tarsi black, pubescent; a broad green stripe runs along the pectus from the front to the middle coxæ, and from the latter to the hind coxæ, and is continued more narrowly along the abdomen; under the wings is a narrow yellowish-green line. Tegmina black, lined with green; opaque portion of wing reddish brown, lined with green towards the costa nearly to the extremity; hind wings smoky hyaline, with a broad curved milk-white band across the middle, not extending to the costa or inner margin. Terminal segments slightly expanded; cerci rather long, crossed at the extremity.

*Female* nearly as in the male, but larger, and with more green lines on the head, including three meeting in front, behind the ocelli, and an additional line on each side, meeting in front of the ocelli. The green lateral stripes on the pectus and abdomen are much less continuous; the upper appendages are black, and about as long as the last segment but one. The hinder half of the abdomen is testaceous beneath, and projects about as far beyond the abdomen as the cerci, like which it is pubescent.

*Dimensions.*

|                                      | ♂.<br>millim. | ♀.<br>millim. |
|--------------------------------------|---------------|---------------|
| Long. corporis . . . . .             | 36            | 46            |
| „ capitis . . . . .                  | 2             | 3.5           |
| „ pronoti . . . . .                  | 3.5           | 3.5           |
| „ mesonoti . . . . .                 | 2.5           | 3             |
| „ metanoti, cum segmento mediano . . | 7             | 7.5           |
| „ segmenti mediani . . . . .         | 1.7           | 3             |
| „ femorum anticorum . . . . .        | 13            | 10            |
| „ „ medianorum . . . . .             | 10            | 10            |
| „ „ posticorum . . . . .             | 12            | 12            |
| „ tegminum . . . . .                 | 4.5           | 6             |
| Exp. al. . . . .                     | 57            | 76            |

Not closely allied to any known species.

## ASCHIPHASMINE.

## Genus PRESBISTUS.

*Aschipasma*, Brunner, Ann. Mus. Genova, xxxiii, p. 100 (1893).

In 1834 Westwood founded a genus *Aschiphasma*, and in 1835 Gray founded a genus *Perlamorphus*. The type of the former is *A. annulipes*, Westwood; and that of Gray, *Perlamorphus hieroglyphicus*, Curt. MS. *P. peleus*, Gray, was added as a second species, but has no claim to be considered the type of *Perlamorphus*; and as *P. hieroglyphicus*, Gray, is considered to be synonymous with *Aschiphasma annulipes*, Westw., Gray's genus and species both fall. But Brunner, who adopts Westwood's later and incorrect spelling *Aschipasma*, divides the genus as follows:—

1. Femora antica carinata et basi curvata . . . . . *Aschipasma*, Westw.
- 1'. Femora antica subteretia, basi non curvata . . . . . *Perlamorpha*, Serv.

As *A. annulipes*, Westw., the type of the genus, belongs to *Perlamorpha*, Brunner, which must, as we have seen, take the name of *Aschiphasma*, it is necessary to rename *Aschipasma*, Brunner, which I therefore designate *Presbistus*, and indicate *Perlamorphus peleus*, Gray, as the type.

## PHASMINÆ.

## Genus ABRACHIA.

*Abrachia*, Kirb. Ann. & Mag. Nat. Hist. (6) iii, p. 503 (1889).

On re-examining my *A. brevicornis*, the type of this genus, I find that it possesses triangular clefts at the ends of the tibiæ, which, coupled with the short antennæ, will bring it at least provisionally into this subfamily. The types are from Theresopolis, Brazil. *Bacteria longimana*, Saussure, from Bahia, is certainly congeneric, and is possibly the same species.

## EXPLANATION OF THE PLATES.

## PLATE XXXIX.

|   | Page |
|---|------|
| Fig. 1. <i>Chondrostethus Woodfordi</i> , Kirb., ♂. (Head, fig. 1 a.) . . . . . | 455  |
| 2. Ditto, ♀. (Head, fig. 2 a.)  |      |
| 3. <i>Bacteria Trophimus</i> , Westw., ♂. (Head, fig. 3 a.) . . . . .           | 463  |
| 4. Ditto, ♀. (Head, fig. 4 a.)  |      |

## PLATE XL.

|   |     |
|---|-----|
| Fig. 1. <i>Hermogenes Hosei</i> , Kirb., ♀. (Head, fig. 1 a.) . . . . .           | 457 |
| 2. <i>Phasgonia Everetti</i> , Kirb., ♀. (Terminal segments, fig. 2 a.) . . . . . | 461 |
| 3. <i>Ischnopoda Phillipsi</i> , Kirb., ♀. (Head, fig. 3 a.) . . . . .            | 467 |
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